

## CLAIMS

1. Device for moulding of objects (5) in plastic material comprising
  - an injection mould comprising two half moulds (1, 2), suitable to define, in closed position, a plurality of injection cavities of said objects (5), wherein said half moulds
  - 5 (1, 2) have a translation motion of reciprocal distancing and nearing, defining a closed position and an open position,
  - an extraction arm (3) from the mould of said objects, provided with reversible gripping elements for said objects, provided with translation movement between a first
  - insertion position in the space between said half moulds (1, 2) when the latter are in
  - 10 their open position, and a second position outside the half moulds,
  - a conditioning turret (6), provided with two sides (6', 6'') situated in a position opposite to each other, each side consisting of a group of conditioning cups (7) for the objects (5), provided with means to hold these objects (5), the turret being supported
  - by means which permit it to effect a first rotational movement around an axis (X)
  - 15 essentially horizontal and a second vertical translation movement between a first higher point under the extraction arm and a second lower position characterised in that the device contains an extraction table for the objects (5) which possesses grasping elements able to extract the objects from the cups (7) of the turret (6) and which is situated beneath said second lower position of the turret (6).
- 20 2. Device as claimed in Claim 1 wherein a translation motion of reciprocal distancing and nearing of the half moulds is vertical.
3. Device as claimed in Claim 2 wherein the reversible grasping elements of the extraction arm (3) constitute a guillotine-like device.
4. Device as claimed in Claim 3 wherein the translation movement of the extraction
- 25 arm (3) is horizontal.
5. Device as claimed in Claim 4 wherein the grasping elements of the extraction table (23) are formed by slots situated on the surface of the table (23) equipped with teeth able to grip the objects (5) resting in the cups.
6. Moulding process of objects (5) in plastic material using the device according to
- 30 Claim 1 consisting of the following stages:

- a) injecting plastic molten material into a mould consisting of two half moulds (1, 2), suitable to define, in their closed position, a group of injection cavities,
  - b) solidifying objects in the mould to a predetermined grade of hardening marking an injection cycle,
  - 5 c) opening the half moulds,
  - d) inserting an extraction arm (3) in the space between said half moulds,
  - e) extracting objects from the mould using an extraction arm (3),
  - f) transporting the objects to a position outside the half moulds,
  - g) releasing the objects in the cups (7) of a cooling turret (6), provided with a
  - 10 plurality of conditioning cups (7) for the objects (5) distributed on two sides positioned opposite each other,
  - h) cooling the objects until reaching a predetermined temperature,
  - i) rotating the turret (6) around an axis essentially horizontal and vertically translating it towards a lower position,
  - 15 l) extracting the objects (5) from the cups (7) by means of gripping elements arranged on an extraction table.
7. Process as claimed in Claim 6 wherein the opening of the half moulds is effected using a motion of relative reciprocal distancing.
8. Process as claimed in Claim 7 wherein there is foreseen on the turret (6) a number
- 20 of cups which is a multiple of the group of injection cavities and wherein the cooling stage h) is a multiple of the injection cycles.
9. Process as claimed in Claim 8 wherein extracting the objects (5) from the cups is performed by means of gripping through slot width constrictions machined on the extraction table and suitable to insert themselves in predetermined zones of the
- 25 objects.
10. Process as claimed in Claim 9 wherein the slot width constrictions have teeth-like shape.
11. Process as claimed in Claim 10 wherein the objects are preforms and the teeth-like constrictions are inserted between a ring (9) situated close to the neck of the
- 30 preform (5) and the end of the respective cup (7) in which the preform is inserted.